

Positioning the Lower Extremities

mobility management.

August 2013 • Vol. 12 No. 8

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On the Cover

The correct combination of power mobility, positioning and electronics can empower consumers to new heights. Cover by Dudley Wakamatsu. Cover concept by Elisha Bury.

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Tobii ATi's system is much more than the next generation of augmentative communications device.



What's New Online: **MobilityMgmt.com**

Be part of ever-expanding social media conversations on MobilityMgmt.com and facebook.com/themobilityproject. Tune in to keep up with industry and consumer/caregiver discussions of breaking news, events and human interest

stories involving all modes of personal mobility, accessibility, freedom and independence. See what topics have your clients cheering, ranting and raving 24/7, and join in the conversation yourself.

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What I Learned from Families of SMA

It's 7:15 on Saturday morning, June 15, and I'm at the Families of Spinal Muscular Atrophy (FSMA) conference at the Disneyland Hotel in Anaheim, Calif. And I'm pretty proud of myself.

Why? First, it's Saturday morning, and I'm not still in pajamas.

Second, I'm not in tears, either.

Two evenings prior, I'd arrived for FSMA's welcome reception only to detour into a stall in the women's restroom. As "When You Wish Upon a Star" played over hotel speakers, I saw dozens of children with SMA, and thought about what had brought them together at this self-proclaimed happiest place on earth. *It isn't supposed to be this way*, I thought in my stall. *This isn't right*.

As minutes went by, I hissed *Stop being so pathetic!* until it worked. Barely. Today, I am determined to do better, and it starts with attending this morning's general session called "It's a Wonderful Life." The title has me feeling optimistic.

Kenneth Hobby, president of FSMA, explains the format of the session, which he calls "one of the most looked-forward-to events." Six adults with SMA will field ask-us-anything questions from an audience largely composed of parents whose kids have SMA.

The panelists vary in age from young adulthood to middle age, and have type 1 or type 2 SMA. Some of the panelists had been expected to die as infants or young children. But here they are, describing their lives as spouses and parents, as college graduates and grad students, as professors, disability advocates or, in one case, a policy staffer for a U.S. senator.

Hmmm. My rolling out of bed this morning suddenly isn't so impressive a feat.

The first question is from the father of a 7-year-old with type 2 SMA: "What is something your parents did, right or wrong, while you were growing up?"

The answers fly:

"My father fixated on the depressing aspect that I'm not as able as other kids are, even though I have so many other great things going on."

"My mother insisted I do chores, even though it took me an hour to dust the living room."

"I was expected to be respectful and polite."

"Very early in life, I was empowered to take part in the medical decisions that affected me."

Next question, from the father of a 12-year-old: "As my son gets older, he wants to hang out with his friends. How do we teach them to help with his care so he can spend time with them?"

Answers: "Kids naturally like helping and will be inclined to help their friends." "If your child is polite and a good friend, other kids will jump in to help because they'll want to be around him." "The earlier that kids get comfortable with others doing some caregiving, the earlier they can start directing their own care."

Next, from a foster parent: "How do I find good mentors for my son who has SMA?"

From the panelists: "There's a new Facebook group just for people with neuromuscular conditions." "Contact your local FSMA chapter and ask if an adult member would like to be a mentor." "Ask yourself, 'How would I find a mentor for him if he *didn't* have SMA?'"

As the discussion continues, that theme becomes more prevalent. One panelist suggests parents ask themselves, "Would I treat my kid *without* a disability the same way?" Another panelist explains to parents why kids with SMA need to learn to take charge of their medical decisions: "Because they may outlive you."

The panelists proved that SMA isn't the top priority in every conversation they have. Nor does every SMA diagnosis have a foregone conclusion. This isn't the journey that parents expected, but there can be hope and happy moments despite the detour. For that lesson, I'm grateful. ●

Laurie Watanabe

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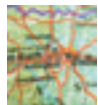
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Numotion Offers Service to Alliance Seating Clients

Numotion has a timely message for former clients of Alliance Seating & Mobility: We'll service your complex rehab seating & mobility equipment.

The offer comes at a time when Alliance Seating & Mobility's parent company, The SCOOTER Store, is undergoing a "business revitalization" according to its Web site and has limited ability to service the power mobility products it's sold.

Bankruptcy Filing

The SCOOTER Store, based in New Braunfels, Texas, filed for bankruptcy in April. At press time, its Web site homepage said the company was "open for business and serving customer needs." But another page warned that The SCOOTER Store's ability to service Medicare-purchased equipment "may be limited while we restructure our business." As for consumers who paid cash, the site says, "Our ability to service that equipment will be extremely limited."

A customer representative answering The SCOOTER Store's phone prior to press time was asked if the company was currently able to service purchases from Alliance Seating & Mobility, its rehab division.

"We do some of them; it depends what the issue could be," she said. "If it's something fairly simple that we can get parts for, yes. If not, we do see if we can point them in a different direction."

Numotion has announced it's willing to help Alliance customers if they're looking for a place to turn.

Merger Creates Greater Service Capacities

Michael Wilson, director of national repair for Numotion, says the

offer to help is an independent one and not part of any partnership with The SCOOTER Store.

"The [Numotion] leadership team came together and decided this was the right thing to do," Wilson told *Mobility Management*. "We saw the need with the Alliance customers who are complex rehab customers, and we wanted to be able to provide this service."

Numotion was formed earlier this year, when national rehab providers ATG Rehab and United Seating & Mobility merged. That timing, as well as ongoing transitional work as a result of the merger, puts Numotion in the right place at the right time, Wilson explained.

"We have a number of initiatives that we're working on to improve our efficiency and our capacity," he noted. "We are making process changes and investing in new technology which give us the capacity to take on additional customers."

Given its complex rehab focus, Numotion is offering to service Alliance Seating & Mobility chairs and accessories: "We're able to help any customer who has a piece of complex rehab technology who is finding it's not functioning in the way that it should," Wilson said.

Alliance customers are invited to call Numotion's National Customer Care Center (800-500-9150) or their local branch office. Numotion intake personnel will work with consumers to discuss what's wrong with the equipment, as well as to determine Medicare information, such as what equipment is on file with the agency.

Wilson noted that all Numotion (numotion.com) locations are offering to help out Alliance customers.

"Our locations have the size and capacity to handle additional influx," he said. "In addition, we have neighboring locations that can assist on a case-by-case basis." ●

John P. Miller Takes Over as Miller's President

Miller's has announced its newest president: John P. Miller, whose father, John J. Miller, served as president for 30 years.

The provider, with four locations in Ohio, is now in its third generation of leadership. The business was founded in 1949 by John F. Miller, the new president's grandfather.

John P. "Johnny" Miller most recently served as the company's executive VP, and a news announcement said he would "oversee all company operations and lead Miller's into the future of wheeled mobility and home medical equipment."

While Miller's sells respiratory and DME, it's best known in this

sector for its complex rehab technology expertise and engineering.

Johnny Miller, current president of the Ohio Association of Medical Equipment Services, is an active member of Three Trackers of Ohio, a non-profit organization focused on adaptive sports. Miller is a certified bi-ski teacher.

"I'm extremely proud of the organization built up over the past 64 years, and I'm excited about our opportunities in the years to come," Miller said. "Miller's has an outstanding group of committed staff members united in our goal of 'Advancing Care, Enhancing Mobility' for the clients we serve." ●

Ottobock to Distribute BodiTrak for Vista Medical

Ottobock has signed an exclusive agreement to distribute PatienTech/Vista Medical's BodiTrak system in North America, according to an announcement from Ottobock.

The announcement described the BodiTrak Smart Fabric system as "a completely new approach to interface pressure mapping and data collection" and noted the system "uses advanced electronic sensors with built-in smart USB electronics and the world's only three-dimensional, stretchable, breathable pressure-sensing material. This proprietary material means an interface pressure mapping reading that closely represents what is actually happening at a load bearing surface in order to promote tissue protection and to help avoid the trauma of a pressure ulcer."

Andrew Frank, VP of sales and marketing for PatienTech/Vista Medical, added that the BodiTrak system includes simplified electronics that are "much simpler to use, easier to maintain and more affordable. We are pleased to partner with Ottobock in helping rehabilitation professionals meet the needs of their clients."

Matt Swiggum, Ottobock VP of mobility solutions for U.S. healthcare, said of the new partnership, "With its pioneering technology and its efficiency in addressing the important quality-of-life issue of skin breakdown, the BodiTrak pressure mapping system is a great fit with the Ottobock brand. We are pleased to bring the BodiTrak to market and look forward to the positive impact our new partnership with PatienTech/Vista Medical has on our customers and the entire rehab community." ●

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Event Coverage

Families of SMA: Honoring the Past, Working for a New Future

ANAHEIM, Calif. — The annual Families of Spinal Muscular Atrophy (FSMA) conference has its feet in multiple worlds.

FSMA is dedicated to finding treatments and a cure for spinal muscular atrophy, a genetic motor neuron disease affecting one in every 6,000 babies born. The organization invests heavily — more than \$50 million so far — in research into drug therapies while working toward a future that no longer includes, as FSMA notes, this number-one genetic killer of children under 2 years of age.

Those investments are due largely to the community's extraordinary fundraising efforts — many of them grassroots activities by families and friends on behalf of children and adults with SMA.



Honoring Their Memories

In some cases the fundraising and awareness efforts have gained momentum even after the person with SMA passed away. One notable example is the Jacob Isaac Rappoport Foundation, created by Adi and Shaina Rappoport in memory of their son, who died of type 1 SMA at 9 months. In the 11 years since, the foundation has raised more than \$1 million for SMA research and support, and the Rappoport family presented FSMA with a check for \$100,000 during the conference.

Another example is the Amy Marquez Scholarship, which pays



FSMA President Kenneth Hobby (left) was part of the welcoming committee during the opening reception.



The welcome reception was definitely a family affair.



In the exhibit hall, Tobii ATi demonstrated eye-gaze communications systems.



A researcher (left) checks out his pint-sized competition during the Researcher Relay Race.



Minnie Mouse was in the house.



Guess who loves Minnie Mouse!

for registration and travel expenses for an adult with SMA to attend the conference. The scholarship is named after FSMA board member Amy Marquez, who had type 1 SMA. Marquez died in September at the age of 41. Her husband, Steve, and their daughters, Harley and Danielle, attended the conference this year in her honor.

Support for Today

But while FSMA seeks a world without SMA and remembers those who died from it, the organization also strives to support families currently living with the condition.

At this conference, that meant educational sessions for attendees of all ages. There were separate "Talk It Out" sessions for kids with SMA, their siblings, and their grandparents. Some classes discussed daily life experiences, from nutrition for G-tube users to respiratory basics and physical therapy regimens. Other

sessions were created to address the unique needs of SMA types 1, 2 and 3, as well as the unique considerations for adults with SMA. An exhibit hall featured seating & mobility, respiratory and augmentative communications equipment.

The more than 1,300 attendees, including more than 200 researchers from 15 countries, also came together, such as at the opening reception and at the general session titled, "It's a Wonderful Life," where adults with SMA offered advice to parents of children with SMA (see Editor's Note). August is SMA Awareness Month: For more information on the condition, visit fsma.org.

— Laurie Watanabe



Mickey Mouse ears were the accessories of choice.



W.B. Mick (second from left) talked to parents in the Permobil booth.



David Milligan (left) and Steve Fox of Sunrise Medical showed off the new Zippie Voyage.

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BL Meyer: A New & “Energizing” Future

Is this really what retirement looks like? After working in the medical devices industry for decades — starting in orthotics and prosthetics, then moving over to seating, and founding ExoMotion (now known as Thomashilfen) in 2004 — BL Meyer retired...and promptly moved to Ghana.

Her husband, Dutch, is already there, working with their foundation named Yeko Anim, a 501 (c) (3) organization. The name roughly translates to “progress” in the Twi language of Ghana’s native Akan people, according to the organization.

It’s another major transition for Meyer, but hardly the first in her career. In an interview with *Mobility Management*, Meyer recalled coming to rehab from the orthotics and prosthetics business.

“The changing over from that into rehab was somewhat startling because everything was funded and done so differently,” she says. “The biggest adjustment for me was that everybody in the loop needed to be included in the discussion. We sold our products at Seattle Foot [made by prosthetics manufacturer M+IND] directly to the orthotist/prosthetist, and that was that. We weren’t really interacting with any of their customers. But in the case of rehab, if your product is interesting to end users, then we very much are getting calls directly from them.”

A New Way to Do Business

Meyer came to the complex rehab industry via positioning manufacturer Bodypoint, located in Seattle. There, she was the sales and international business development manager for a decade. At Bodypoint, she says, she learned the importance of communicating effectively with all members of the rehab team.

“If you’re going to try to grow the business on behalf of the manufacturer, I found you had to understand how to communicate well with all the groups involved,” Meyer explains. “Always know who you’re talking to. If it’s a mother, she’s advocating for her child. If it’s a dealer, you’re hoping they’re advocating for that child through the therapist. If it’s the therapist, they’re advocating for the child, but they never want them to be in a situation to see something they can’t have.”

“Every time you get up and do a presentation, every time you speak to someone, you have to really know deeply who it is you’re speaking to and advocate for your product line appropriately. And sometimes you realize you’re not right for them, and be able to say, ‘I really think this is not going to be the right thing for you,’ and give up that potential sale in order to do the right thing.”

That mindset, Meyer says, is “a big change from normal business. There’s nothing normal, retail, make-a-fine-product-and-sell-it about anything you do in the rehab business.”

With the founding of ExoMotion, Meyer had the chance to emphasize her belief in Micro Stimulation and the valuable input it gives to children, particularly those with disabilities.

“Movement, some of us believe, is life,” she says. “It gives information to the brain, just like sound and just like all the other senses. It brings sensory input through the body that can hopefully help in a case where



BL Meyer, left — with Darlene Hawthorne, business development/education manager for Thomashilfen — postponed her retirement long enough to attend June’s Families of Spinal Muscular Atrophy conference in Anaheim, Calif.

so many of the issues we’re dealing with that have physical results are from damage to the brain, not the physical part of the body that you’re trying to help.”

On to a New Challenge

Now, Meyer is trading the rehab community for one in Ghana.

“We are moving into the village that we have been supporting,” she says. “Our main programs have always been education. We’ve supported that from the youngest child in the village who can’t afford school fees, all the way up to last year, when 37 kids were in college.”

The Meyers’ Yeko Anim foundation also supports a disability action fund. “It’s a micro-lending program where people in town can come and get a small loan to start their own business in the town,” she says. “It’s a \$3-a-day market economy. We have guys who have gotten \$60 [as a loan] and they’ve paid that back and made some money, because they were able to set up a little storefront instead of just squatting on the side of the street and doing whatever their work is. And these are all disabled people.”

Future plans could involve setting up a sustainable adventure tourism resort built and staffed by locals. All of Yeko Anim’s work, Meyer adds, is done in consultation with community leaders.

“We didn’t come with a program of our own that was going to be right for them,” she says. “We sat down and listened and thought, ‘Where could we best put our collective knowledge?’ We’ve been doing this remotely for a number of years, and now we’re going to go and do it hands on.”

The best way to stay in touch with the Meyers will be through the Yeko Anim Web site, which is being upgraded: yekoanim.org.

“It’s all very amazing, that it’s just kind of rolling into the next chapter,” Meyer says. “It’s going to be an incredible retirement, from this working world to something much simpler, and yet just as challenging in every way. That’s very energizing.” ●

MK Battery Named Title Sponsor for USA Power Soccer

Gooooooooallllll! Thanks to a new sponsorship from MK Battery, power soccer players and fans may be hearing a lot more of that cheer in years to come.

The United States Power Soccer Association (USPSA) and MK Battery jointly announced that the manufacturer has signed a multi-year agreement that gives it exclusive title sponsorship rights and official battery designation for all U.S. Power Soccer Conference Cup tournaments and Team USA international competitions, including the 2015 World Cup. Team USA is the defending World Cup champion.

"Power soccer is the fastest growing team sport for power wheelchair users in the world," said USPSA President Ta'avasa Mamea. "MK Battery's financial support will significantly help accelerate the sport's

growth. On behalf of the athletes, families, fans and volunteers, we are grateful that an international company like MK Battery has become a huge advocate and active partner in the world of power soccer. I cannot tell you how happy I am for the families and athletes for how this will affect their teams."

Athletes play with specially modified power chairs on indoor basketball courts.

"The sport of power soccer enhances the lives of those with disabilities," says Wayne Merdinger, MK VP of business development. "We are extremely proud to be taking such an active role in the program. We have provided reliable power to wheelchair users for years, and we were flattered to learn that our batteries have been in use by most of these athletes for some time." ●

Permobil North America Introduces New Web Site

Having recently launched a new corporate site, Permobil now has turned its attention specifically to North America, with a redesigned site that boasts not just updated graphics and layout, but also a new way to navigate.

The North American site can be accessed through the corporate permobil.com site (use "Select Country" to get to the American or Canadian pages), or directly by going to permobilus.com.

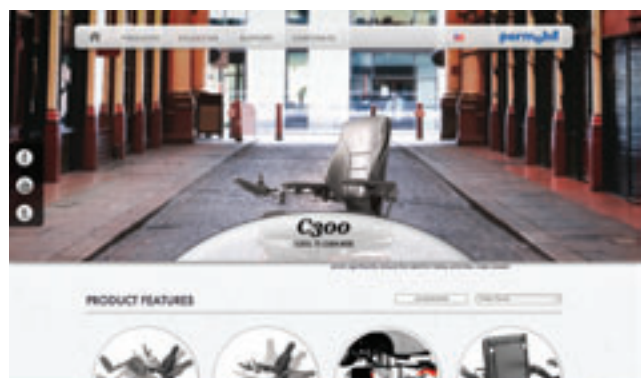
Navigation is accomplished through scrolling, tablet/smartphone style, which could make the site easier to use for visitors with finger or hand dexterity issues.

"Our innovation is not limited to our products," said Larry Jackson, Permobil North America's president/CEO, in a news announcement. "All of the other things, from our marketing efforts to our customer service practices, are continuously developed and improved to make things easier for our customer."

The site contains information on Permobil power chairs and seating systems, including both major features and more detailed specifications. Owners' and service manual downloads are just a few clicks away.

For industry professionals, the site includes information on training and education, as well as funding resources. Scroll to find HCPCS code lists, Medicare fee schedules and documentation support, such as whitepapers and samples of letters of medical necessity for various Permobil products.

"We want our customers to explore the site, maybe even come up with new powered mobility solutions to their needs that they might not have known about previously," said North American Marketing Manager Barry Steelman. "There is practically all the information you need to make informed decisions about the products that are right



Permobilus.com's new scrolling navigation feature, similar to the technology being used by tablets and smartphones, makes it easy to move quickly from page to page on the redesigned site.

for you. Plus, the simplicity of the way we have categorized the site contents gets you where you want to be almost instantly." ●

empOWERed

Power Chair Components of Today and the Future Focus on One Thing: Making Every Day Better

By Elisha Bury

The joystick. The captain seat. These two iconic images defined the first power chair decades ago. Since then, and especially in the last 10 years, the industry has come a long way. Today's power components for complex rehab conjure images of tilt, recline, seat elevation and standing as well as several out-of-this world proportional and switch driving controls, including the tablet and head array systems.

These high-tech improvements have made a marked difference on quality of life, accessibility and independence for many people with complex rehab needs. So what exactly are the industry's tech gurus dreaming up next?

Power Seating & Positioning

Without question, power positioning has greatly improved the lives of people who use complex rehab equipment.

"For individuals with disabilities with complex medical needs, a lot of these power positioning devices, they're not a luxury item," says Jay Doherty, OTR, ATP/SMS, clinical education manager for Quantum Rehab. "They have functions that are critical to living safely and independently in the home and community."

But the technology is more than just a medical necessity. It's a confidence booster. It gives users more control. It helps people access their environment.

With outcomes like these, it's no wonder consumers and clinicians are demanding more — and it's a demand the industry welcomes.

A Culture of Demand

The laws of supply and demand sometimes lead to great improvements for products, and such is the case for power positioning.

No longer are power positioning components an afterthought, says Brad Peterson, VP of sales and education at Invacare Corp.'s Motion Concepts.

"Power chairs out there from all the manufacturers are better designed to accept power positioning systems," he says. "Now your power chairs are being made with power positioning in mind. So it allows us to do a lot more as far as seat-to-floor heights and a more integrated, functional system."

Because power positioning is top of mind, clients and clinicians are



In the past we've thought of power seat functions primarily for pressure relief. But now I think we're opening our eyes more to how power positioning can really improve someone's function and their activities and their participation in different things

— Amy Morgan, Permobil

asking for the latest components. They're also asking for components that don't yet exist, which drives the growth of the technology.

For example, Peterson notes that Motion Concepts' latest development — a mount for communication devices such as a tablet or PC — came by way of demand. The mount enables someone to move the communication or electronic device farther away or closer, and it flips down to improve the visual field for driving. The device also swings away for caregiver access, transferring or transportation.

If Apple's success is any indication, clients won't be satisfied with the same old designs either, and manufacturers such as Motion Concepts are taking note.

"They want to be seen for who they are, not for the chair that they're driving. So we want to make sure the chairs are aesthetically pleasing [and] that they're highly functional," Peterson says. "We don't want to sacrifice function for form, but we need to make sure that we design our systems with a critical eye to how they look and how they function."

Dan Critchfield, product manager for power, Sunrise Medical, agrees. "As we bring in more industrial design combined with more appealing aesthetics, we may see a higher level of use," he says.

A Word About Modularity

But let's go back to that integrated, functional system that Peterson mentions.

Cue the modular system. It's one of those advancements that when you think about what it does — enabling clinicians and providers to add and remove components to meet a client's changing needs — you wonder how we ever got by without it.

Permobil launched its modular system, the Corpus 3G and Corpus HD (the version with a 450-lb. weight capacity), more than a year ago. Amy Morgan, PT, ATP, Permobil's national clinical education manager, says that what makes this system especially cutting edge is its low seat-to-floor height, which is the same with or without power functions.

In the future, the industry will see much more of these systems,

Peterson predicts.

"We think what we're seeing in the future is more modular systems," he says. "We're seeing systems that more easily grow and adapt to the patient's changing needs."

Evidence of Peterson's prediction rings true with Quantum Rehab's release of the TRU-Balance 3 modular seating system last month. The company also plans to release a version with a 450-lb. weight capacity in September.

The ability to add and remove power components is a revolutionary way of building complex rehab chairs. We already know that people with progressive conditions, such as amyotrophic lateral sclerosis (ALS), and growing children can benefit from the ability to make adjustments as conditions, sizes and shapes change. But the truth is, everybody changes.

The modular system increases clinicians' confidence in prescribing because they know they can add a component down the road, Morgan explains.

In addition, Critchfield says integrating these power components enables the product itself to accomplish more tasks without taking up as much space.

"I do think there is more opportunity for integration as technology improves," Critchfield says.

Modularity can even come to the rescue with funding. For example, think about that power seat elevator, which is hard to get funded.

"I've had this situation happen, where the consumer decides that the seat elevator was denied so they're going to go with a tilt and recline system," Doherty explains. "But then they find out a few months down the road that they have other funding for it, but they weren't aware of it at the time. Now they can get their seat elevator funded. ... To retrofit it would be difficult."

That is, it would've been difficult before the modular systems.

Adjusting the World

Sure, the new modular systems can adjust to changing needs for power positioning, but the adjustability of the system covers much more than that.

For example, the articulating foot platform on the TRU-Balance 3 can be dialed into an individual's needs to properly support the legs and

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We don't want to sacrifice function for form, but we need to make sure that we design our systems with a critical eye to how they look and how they function

— Brad Peterson, Motion Concepts

feet through all arcs of motion, and the seat size can be adjusted independent of the back size, Doherty says. In fact, fine adjustments can be made while the client is in the chair, saving time for everyone involved.

Adjustability is especially important for the provider, Doherty explains. He remembers when he worked as a clinician and provider. Often he would take a client's measurements in the rehab center, and by the time the chair came in, the client had already gone home and gained weight from lack of activity. The chair no longer fit. With this new system, however, adjustments can be made without purchasing a new chair.

All this is to say that Doherty predicts adjustability will continue to

be the wave of the future.

"The adjustability and the ability to give the consumer the ability to independently change their position will continue to be present, but the way the end user can change positions will continue to be explored," he says.

Morgan agrees. She says tomorrow's power positioning systems must have adjustability plus memory. Morgan describes this function as taking "the guessing game out of it for the client."

Already Permobil's Independent Repositioning Mode enables the rehab team to set an ideal position for the client's pressure relief or other clinical goal. The chair automatically moves into the correct position.

This function is especially important when using tilt and recline, Morgan explains, as there's a specific sequence — tilt and then recline — to prevent shearing and other negative outcomes.

"Sometimes it's hard for even the clinician to remember that sequence, much less the user themselves," Morgan says.

In addition, recent studies have shown that people aren't tilting as far as needed for proper pressure relief, according to Morgan.

Clients "think that by tilting just a little bit that they're getting good

Funding Update: Power Seat Elevation

When it comes to funding for power seat elevation, Medicare's lack of response leaves most in the industry scratching their heads.

"I don't understand it," says Brad Peterson, of Motion Concepts. "Medicare said that they pay for functional ability in the home. I don't know about you, but if I came home tomorrow in a wheelchair, I couldn't access most things in my home without being able to raise my seat. It's something that should be looked at, should be more readily available."

Amy Morgan, PT, ATP, at Permobil, says that even though progress is not being made with Medicare, there is some hope at the state level.

"State Medicaid funding for seat elevation is improving, obviously dependent upon the state," she says. "The states that have been challenged as to why they're denying seat elevation have seen success and have seen policies changed and now cover seat elevation."

In some instances, Morgan has seen this strategy work with Medicare on an individual basis, after fighting through the appeals process.

"There have been individuals who have been successful in getting seat elevation authorized through Medicare, but it's an individual thing," she emphasizes. "They're (Medicare) not changing their policy anytime soon."

Jay Doherty, OTR, ATP/SMS, at Quantum Rehab, is hoping the passage of the separate benefit category for complex rehab technology will lead to more funding for power seat elevation.

"One of the problems we face right now is that durable medical equipment and complex rehab technology are still lumped into the same category in Medicare, which really makes it difficult for coding, coverage and payment policies to be written in a manner that accurately meets the needs of the smaller groups within the larger group," he says. "And the complex rehab technology really has its own niche. It

really meets a need of a specific part of the population."

In the meantime, Doherty encourages clinicians to continue prescribing power seat elevation. In fact, he says clinicians have an "obligation" to do so and to tell clients how they will benefit from the technology.

"Without the continual recommendation of that type of system, we can't document the benefit of the device itself," he says.

The National Registry of Rehabilitation Technology Suppliers (NRRTS) and the University of Pittsburgh are currently working on a study that Doherty says is showing that many individuals cannot reach surface heights and carry out daily tasks using their current mobility devices without seat elevation. He hopes this type of evidence will fuel the fight for coverage.

Meanwhile, the industry laments the lack of funding that ultimately dampens the development and implementation of new technologies — not only for seat elevation but also across the board.

"There are still many, many, many things that we can do," Peterson says. "We can give people access to different parts of their environment, but also give them the ability to use their chair to do more. But it all comes down to funding."

For Dan Critchfield, at Sunrise Medical, the consumer is the key to improving funding. Just as they've demanded technological improvements in equipment, clients must also demand coverage.

"I think that consumer advocacy is now the best opportunity to get seat elevators funded," he says. "As consumers continue to become more involved in the efforts to improve their access to this technology — and complex rehab technology as a whole — I believe funding sources will follow."

To find out if your state covers power seat elevation, visit [medicaid.gov](https://www.medicicaid.gov), click on the menu *Medicaid* and choose *By State*. ●



Quantum Rehab's TRU-Balance 3 system was launched last month and features a modular power positioning system that adds or subtracts functions as the client's needs change.



Motion Concepts' new communication device mount is the result of client feedback.



Permobil's Corpus 3G provides a unique modular power positioning system with a low seat-to-floor height.

pressure relief when they're really not," she says. "Sometimes tilting 20° or 30° feels like a lot, but really pressure relief comes more at 45 or more degrees of tilt."

By setting the tilt to move into position automatically, clinicians can be sure the client is getting the proper pressure relief.

Also when clinicians can set the system to remember angles, it allows them to prescribe technologies to clients that might not otherwise get them. For example, Morgan says sometimes positioning components move out of place during recline, but with Permobil's Intelligent Control System, the clinician can simply limit the angles of certain functions to prevent the client from reclining past a certain point.

"I have the ability to stop that where it is and also reevaluate it, change it and improve it, give them more in the future if that's indicated," Morgan says. "So you have a lot of programmability options within the seating systems themselves to make them work for people."

Improving Access

What's more, tomorrow's power positioning systems will likely be available to more people and help them do more in their environments.

Already the addition of a 450-lb. weight capacity to power positioning systems is bringing power positioning to a whole new set of clients.

"Previously, power seat functions have been significantly limited for those larger individuals just because of the stress they put on the power," Morgan says. "The Corpus HD has given people that are larger the ability to have full range of tilt, recline, leg elevation and even seat elevation. That's pretty impressive to be able to have a durable system that can withstand that type of force, but also give those people opportunity to, for example, get their feet above their heart."

The Corpus 3G also has a function in which the footplates lower to the floor completely, and then the seat elevator raises the seat so that "someone can independently do a sit-to-stand transfer out of the chair, kind of like a lift chair might do," Morgan says.

In fact, access to the environment is the next big thing for power positioning.

"I believe that, for the most part, manufacturers have addressed mobility and positioning. Now we need to focus on increased accessibility and independence to improve the whole life experience," Critchfield says.

He says the industry is moving in that direction.

"For example, the ability to reach high cabinets with a 12" seat elevator while maintaining a seat height of 16" makes an incredible impact on an individual's independence without the need for home modifications," Critchfield says.

Morgan sees people having more access to independent living through improvements in components such as seat-to-floor height and transferring.

"In the past we've thought of power seat functions primarily for pressure relief," Morgan says. "But now I think we're opening our eyes more to how power positioning can really improve someone's function and their activities and their participation in different things."

In the end, manufacturers might not have the most power over what changes will come.

"We take a lot of feedback from the physicians, clinicians, rehab technology providers and the end users," Doherty explains. "We take that feedback and are constantly looking at, what we can do better based on the feedback they give us? Is there something they are asking for that we can meet a need? I don't necessarily know where it's going, but it's always changing based on the feedback."

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We feel like it's not just a black-and-white type of world

— Chris Ligi, Switch-It,
regarding switch vs. proportional driving controls

Electronics

At a recent industry/consumer show, a Permobil display showed off a museum of electronic drive controls. Among the technologies on display were head arrays, a cup navigator, touch switches and a mini joystick with a finger cup control that require less throw and pressure. When you see all of these technologies laid out before you, it really shows how hard the industry is working to improve driveability for today's power consumers.

Permobil's Amy Morgan, PT, ATP, national clinical education manager, agrees that we've come a long way in only a short time.

"The past three to four years is when everybody upped their game in the electronics field, and everyone updated their electronics even further," she says.

Today's Exciting Electronics

One thing the electronics industry understands is that there is always room for improvement. So when *Mobility Management* questioned electronics experts Lisa Rotelli, director of Adaptive Switch Laboratories, and Chris Ligi, director of global sales at Switch-It, the word that kept popping up was *fine-tuning*.

Rotelli, for example, says electronics have helped clinicians fine-tune a chair to meet a client's needs. In fact, today's electronics can even make a switch feel more like a proportional drive control using sensors and lightning switches with fiber optics. Some of these switches do not require pressure and can be initiated simply by covering the switch, Rotelli says.

"You can now, with today's electronics, program that so much better that it feels like a proportional joystick, which gives people more control of their environment," Rotelli says.

Specialized programming can adjust acceleration, top speed and response when moving to a different switch — all individualized to the user.

And that old joystick has given way to many other options.

Ligi describes Switch-It's version of the mini joystick, which requires little pressure and flexion for activation and reduces throw.

"It takes even less movement — or really no movement — and you can adjust how much pressure or force you need in order to operate," Ligi says. "So you have clients that have limited range of motion or no range of motion and are just extremely weak; they could not operate any kind of control before. And that's opened up the doors to let them use that to start driving chairs again."

When clinicians have more options, clients have more say in what types of devices they want and ultimately more control of the chair.

Rotelli says today's electronics are more adjustable and changeable than ever before, which is especially important for clients with progressive diseases, such as amyotrophic lateral sclerosis.

For example, Rotelli says a system might have three switches in a head array: backpad, right and left. When the client becomes weaker

Is Eye Gaze Coming to a Power Chair Near You?



Eye gaze is nearly an urban legend in the industry — we've been hearing about it for years, but no one's quite sure if it's powering wheelchairs as of yet.

According to Amy Morgan, PT, ATP, at Permobil, the simple answer is no.

A company out of Norway has developed an eye-gaze driving control. Morgan explains that the control is essentially a single-switch scanner that uses the person's eye gaze to choose direction. Users simply focus on the direction they want to go next and then depress a switch when they're ready to go that way.

"In an indoor situation when someone doesn't have glasses, it works pretty well. I wear glasses. So when I tried to use it, it kept messing up because it wasn't able to see my eyes because of my glasses. That was a problem for me," Morgan says.

That same issue arises in outdoor lighting, especially bright sunlight, and any other situation that might prevent the system from seeing a person's eye gaze.

Fortunately, the driving control has a backup plan. In those situations, the system reverts to a single-switch scanner.

But when it comes to the future and practicality of eye-gaze technology, Morgan is hesitant.

"Eye gaze is great for computer access, for a communication device, things like that. I think we've really developed the eye-gaze technology for those uses," she says. "But as for driving the chair, we're not there yet, and I'm not sure that we're going to get there."

The reason? Morgan doesn't think the technology is safe.

"The fact is when you're using it (eye gaze) for communication or for computer access and you look away, you just look away and the mouse doesn't move anymore," she says. "When you're driving, it's a whole other story. It would go where your eyes go. So if the cursor runs off the screen, that's not hurting anybody. But if the chair runs off the road because their eyes went in a different direction..."

For Morgan, the cool thing about this particular eye-gaze system is not so much the eye-gaze technology itself, but the integration of features, such as the system's ability to answer phones and function as a personal computer in addition to being a wheelchair.

Now that level of integration is definitely a possibility for tomorrow's power chair. ●



Photos by Laurie Watanabe

Permobil's 2013 Power Trip display features an array of electronic drive controls, including a mini joystick, head array and finger cup control joystick.

and loses rotation on the backpad, she'll take the sensor out and plug it in somewhere where the person might still have functional movement, such as near the finger or the thigh. Then she'll add a switch there.

"So we can really with the technology match their ability for a very long period of time," Rotelli says.

For Morgan, the excitement of today's technology really comes down to one thing: integration. She says today's chairs no longer have separate, external controls for everything from communication devices to PCUs.

"Environment controls, turning on the TV, changing channels, talking on the communication device — all of this can be done inherently through the chairs now instead of needing to plan a whole separate switch and system for the operation of those devices," she says.

A Step in the Right Direction

Ligi says advancements in electronics are really made in one of two ways: baby steps or giant leaps. He describes the process of fine-tuning the programming as baby steps.

"It's always been good, and it's definitely a step in the right direction. But it's expected; it's a natural evolution," he says.

The giant leaps, on the other hand, don't happen often, Ligi says, but when they do, "it's like, 'Oh wow, this is not just one more programming parameter; this is a whole new way of driving.'"

A lot of times Ligi says those steps are made by integrating something familiar from another industry into the mobility system, such as a PlayStation control that someone already knows how to use, or Switch-It's new capacitive touchscreen that mimics the way people use a cell phone or iPad.

Ligi says he knows he's onto something good when he sees a light-bulb go on for a clinician, as it did for a provider whose client had an old RIM control joystick on the headrest that was breaking down.

"He's sitting there thinking should he repair that or should he get a new one or should he get something else, (and) the client was just going to town on their iPad, just surfing the Internet with their knuckle. And it really didn't exist, a tablet-type control," Ligi says.

"When he saw our Touch Drive, he thought, 'Oh wow. That's perfect. That's how they can drive a chair.' So it's kind of those aha moments that you realize you're really onto something, that you can really help a lot of people drive that couldn't before."

The Future Is Wireless

Smart homes are complex rehab's flying car. We've been talking about them for years, but just how close are they to reality?

According to Rotelli, some of the electronic capabilities to access the home environment are currently being used, and there's no denying this is the wave of the future.

Computers are helping people activate lights and heating/air remotely as well as open doors. Tomorrow's power chair might just be the next control center.

In fact, some of this is already being done on a small scale.

"Our problem was getting access to the device, and that's become a lot better," Rotelli says.

The driver for this type of technology is the increased use of computers, which is another area Rotelli sees improvements coming for power chair users.

"What I see happening now are more and more clients wanting — and should be having — access to their computers, access to their iPads and their tablets. That technology is here today, but I see that evolving completely," Rotelli explains.

One of the biggest benefits for wireless technology is the transfer of information, Rotelli says, including the remote monitoring of problems with the chair and components, such as batteries.

Technicians will be able to tell what is happening to the chair before they go to the client's home to repair it. In addition, some repairs, such as software and firmware upgrades, can be done remotely.

"That's something that's really big and it has only been in the last few years that companies are able to instead of buying a new controller for their wheelchair, actually just update your firmware," Rotelli says. "And that's huge, and that's really beneficial for the client."

She says both of these improvements will cut down on the time that clients are without their power chairs and save providers time.

Tomorrow's Power Chairs

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Our age groups are a lot more computer savvy and ... that's really going to change how we not only view people with wheelchairs, but work with clients with wheelchairs

— Lisa Rotelli, Adaptive Switch Laboratories

But before the industry can embrace this change, there are a few bugs to work out.

"Once I unplug something from my general system, it means I'm going to have to have battery power to make it work," Rotelli says. "So that's something else I need to charge, something else I need to think about."

Ligi also says there are issues with seamless integration and who — either manufacturers or third-party electronics companies — will provide the wireless technology.

"I think it could be double work. For example, if we do Bluetooth and they do Bluetooth, is that going to be a redundancy? Or is one going to be better than the other?" Ligi questions. "There's a lot of things that we're going to have to figure out how they're going to play

out and what's going to be the most seamless."

Morgan also says that even though clients ask for the ability to use their phones and computers through their chairs all the time, the quickly advancing technology has inhibited the integration into the chair.

"The problem is phone technology is changing so rapidly. As soon as you get it set for one type of system, it's going to be obsolete for the next system," she says.

The Future Is Not Black and White

Ligi predicts that the future will soon bring drive controls that are not all proportional and not all switch.

"One of the other things we're trying to do is, even though our name is Switch-It, we're really trying to move more toward proportional devices," he says. "In the past, it's been kind of like, okay, you can drive with a joystick — kind of a staple around here — but you can drive proportional with a joystick, or you can drive switch through a head array. And we feel like it's not just a black-and-white type of world."

Ligi says Switch-It is looking at more hybrid devices that combine the best of both worlds and can adjust with the client's needs.

"In some cases, a kid, for example, they may just go into extension the first time they drive because they're so excited, and they may not

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be able to move their arm forward or backward. They can only move it laterally,” Ligi says. “So you may just start with switches on a tray, and let them go left and right for all their directions.”

But once the client settles into a daily routine, as long as he or she has the capability to move the hand or arm forward and backward, Ligi says the clinician can convert the switch to a proportional control.

By reprogramming the same device or enabling a provider to hit a provider-accessible panel, the device could become proportional without needing a new device — or more importantly, new funding — Ligi explains.

Obstacles Ahead

With all of these advances on the horizon, you’d think our power pros would have their creativity tapped.

Unfortunately, funding is making our industry think outside more than just one box, and their creativity is making these advances possible for all clients, not just the ones capable of paying out of pocket.

Rotelli cites access to iPhone and Android technologies as one example.

“A lot of times people say, ‘Well, this becomes a huge funding

nightmare.’ Well, it does and it doesn’t because funding is there for people to have telephone access. And if I can access my iPhone or my Android phone, then that is an avenue that I can get funding for somebody because it is a safety issue.

Once I have access to that, then my whole world opens up so I can get back into life,” she says.

Rotelli says the key to getting people access is that the industry must explore other avenues such as this one.

“We have to make sure that we take a look at the whole funding realm,” she says. “Vocational rehab pays a lot for computer access because that’s a vocational opportunity for somebody. So we’re going to have to get more creative as time goes on.”

The bottom line is technology will have to keep up with today’s changing client.

“Our age groups are a lot more computer savvy and ... that’s really going to change how we not only view people with wheelchairs, but work with clients with wheelchairs because we can all have the same access,” Rotelli says. “And that’s what the goal is.” ●

Elisha Bury is a freelance writer and editor who has worked in the mobility sector since 2005. She previously served as the editor of The Mobility Project and associate editor of Mobility Management.

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How Lower-Extremity Positioning Can Impact More Than Just Legs & Feet

By Laurie Watanabe

In discussions of seating & mobility, there is no shortage of talk about the pelvis, the head (“Proper position optimizes field of vision and opportunities for socializing!”) and the upper extremities (“We’re aiming for efficient self propulsion or ease of reaching driving controls!”).

In all the conversations of clinical efficacies and medical justifications, lower-extremity positioning may get short-changed. But there are multiple reasons to get feet and legs properly positioned — and a number of obstacles that can keep it from happening.

Visual Signs of Poor Positioning

Asked the goal of proper lower-extremity positioning, Chris Reidmiller, ATP, national sales manager of Therafin Corp., says, “A natural pelvic position. Everything is a stepping stone; everything has its place. One spot out of position can cause the rest of everything to be out of position. If the lower extremities are out of whack, they can pull the pelvis out of whack, which in turn can pull the spine, head position and so on.”

Stephanie Tanguay, OT, ATP, clinical education specialist at Motion Concepts, agrees.

“As long as our legs are attached to our pelvis, there is absolutely going to be an effect of not properly positioning the lower extremities,” she says. “Keeping our feet and legs in orientation, in the proper alignment, will help with stabilizing and maintaining seated posture.”

What, then, does poor lower-extremity positioning look like?

What are some visual cues that indicate there might be a problem?

“I always think of one where the knees are up in the air, essentially,” Reidmiller says. “The lower extremities aren’t positioned properly or aren’t at the right length. Or they could have a poor angle of the lower extremities, which is causing the pelvis to tilt, which is going to ultimately result in their head leaning forward, maybe more of a C curve of their spine, allowing their head to lean forward. You usually see that because the pelvis is being pulled out, which indicates the legs are way out of proportion also.”

Tanguay cites clients with “knees being up higher than their pelvis and being unsupported or unweighted. We tend to see somebody who has their femurs offloaded: Their legs tend to swing in the breeze a little bit, left and right.”

Consumers themselves tend to speak up when legs and feet aren’t positioned symmetrically, Tanguay adds. “I hear them mention symmetry....I hear consumers and their caregivers a

Getting Under Foot

lot of the time saying, “They’re not the same.”

Positioning Goals to Aim For

But ultimately, optimal positioning for feet and legs might not include picture-perfect symmetry.

“We’re not always guaranteed that both of our ankles have the same range of motion or the same leg length,” Tanguay points out. “There’s a lot of things that can contribute to having asymmetrical leg length — maybe rotation of the pelvis, a dislocated hip, a surgical revision of the head of the femur. You could have a history of lower-extremity fracture that can shorten seat depth as well.

“[Consumers] want the footplate angle to always be symmetrical. If we have an angle-adjustable knee position, like you might have with the Seating Dynamics multi-spline joint, there’s somebody who would be saying, ‘They’re not the same.’ I know that we tend to think of everything being symmetrical, and that’s what’s ‘right,’ but it’s not. It has to really be more of what the range of motion is and what the body presents.”

In other words, achieving the “right” foot and leg positioning can sometimes require meeting a consumer where they are. And overall, lower-extremity positioning needs to work well with the positioning needs of other parts of the body.

So how do you know when you’ve got the right combinations dialed in?

Greg Peek, owner of Seating Dynamics, says, “My experience in adjusting footrests and legrests taught me that when they’re properly adjusted, there should be minimal weight on the footplate, and the thighs should be supported at the edge of the cushion or along the entire surface contact between the thigh and the cushion. That’s where the weight should be supported primarily, and the footplate is there as a support. It’s not the primary support/weight-bearing surface.”

When the footplate bears too much weight, Peek explains, “It is going to have an impact on what the [seat] cushion is doing. If you’ve got an improperly adjusted footrest that is too short, it’s going to bear more weight, and it’s going to lift the thigh off the cushion and put more pressure on ischials.”

Tanguay says another problem occurs when the consumer is sitting more forward than they should be, or when they’ve slid down or forward on the seat cushion, causing some posterior pelvic rotation.

“Once the pelvis rotates posterior, it’s very easy to lose alignment of our femurs,” she says. “A lot of time how it manifests is our patient [sits] abducted, and at the lower extremities the outside aspect of the calf just below the knee can be sitting up against the hanger of the lower-extremity support.”

Tanguay says in those cases, consumers or family members will report seeing on the skin “an indentation; there’s always a little curved tubular mark. If it’s somebody who has mild edema, if you’re touching that hanger of the lower-extremity support, the soft tissue and the fluid will kind of move around it, so we have that indentation.”

Tanguay says manufacturers offer padded hanger wraps, or offset receivers so hangers can be set offboard and, the hope is, out of the way. Or: “If we can do something a little better with their posture to

get them positioned back a little bit more, or maybe have a cushion that has a slightly higher contour on the front corners, on the edges of the product. That’s when we tend to use something that has an adductor — it would help keep the legs a little bit better in alignment and hopefully keep them from touching the hangers.”

Range of Motion & Other Restrictions

Loss of range of motion and similar mobility restrictions can be another lower-extremity positioning challenge.

For instance, windswept positions, Reidmiller says, can be difficult to accommodate: “They have fixed leg angles,” he says, but consumers with windswept positioning may have other issues as well.

“If you hold your head to the side long enough, your body is going to try to correct itself,” he explains. “So when you have a spinal rotation, your body is trying to correct itself over time. We all want our visual plane horizontal and that sort of thing, so our body will try to pull in different directions to keep our head the way it needs to be.

“So with the windswept position, it usually means their spine is rotated also to allow their head to get into that visual plane. Sometimes we’re not trying to get the pelvis in a neutral position, because the majority of those windswept positions are fixed types of positions where they have muscle shortenings; they’re really tight. So what we’ll do is give them the proper head position and to help support them, and let the legs fall where they need to go to give us that and support the rest of the body.”

Meanwhile, Tanguay says the more time a consumer is in a seated position — such as in a wheelchair — “there’s a higher prevalence of them having shortened calf muscles. A lot of our consumers end up losing some of the dorsi-flexion of their ankle, meaning that they’re toe up and heel down. When the calf muscles get tight, that type of range of motion, we see a lot of consumers who lose that very rapidly. It gets tight, and they have to do stretches.”

Lower-Extremity Interventions

There are many ways to intervene when optimal lower-extremity positioning isn’t easily achievable. In the past, solutions have included essentially strapping feet to their footrests — an intervention that could result, Reidmiller says, in consumers looking “like Frankenstein.” But today’s clinicians and ATPs have a wider array of choices.

And some of those choices involve tweaking a client’s positioning rather than opting for accessories.

“If we have a consumer that could actually sit in a chair with a tighter knee angle,” Tanguay says, “I’m thinking of a manual chair with an 85° front or an 80° front orientation, where somebody sits with their feet kind of tucked underneath them a little bit more, that person hopefully has a little bit more of that range. I actually angle footplates quite often in those types of chairs so they can have a little more of that stretch and be oriented in a little more dorsi-flexion. There are some people who might say they really like that because that dorsi-flexed angle of the footplate when they position their feet back on it, it has a little bit more contact and there’s a little bit more resis-

Getting Under Foot

tance. It actually gives them a little bit more stability. If they're going over uneven surfaces, it's less likely that their foot might migrate out of the footplate, drop off the front edge. They can maintain that position without having to have something like a strap around their lower leg.

"If somebody has the range, I would rather set that orientation up with a little bit of dorsi-flexion rather than having it too flat."

Reidmiller has seen a number of clients with tone so strong that they break footplates and similar accessories. For these clients, dynamic accessories that move and flex with them may be the answer.

"The tone's got to go somewhere," he explains. "And if something's solid or static, the tone's going to go into that piece of equipment, and it tends to break. If we allow them to alleviate that tone, hopefully there's less breakage."

Peek has a long history of developing dynamic components, including dynamic rocker backrests and now, dynamic footrests.

"Being a mechanical designer, when somebody tells me a footrest broke — well, why did the footrest break?" Peek asks. "When you hear that over and over again, you know there's a pattern causing it. And in a lot of cases, what I hear of is extensor tone."

[The rocker backrest and dynamic footrests] were conceived for the same basic need: to absorb energy and not transmit load into the wheelchair. Their original purpose was from a mechanical perspective, not a clinical perspective."

But in working to create more durable positioning components, Peek also has tapped into the cause of at least some tone incidents.

"In some cases, it's sensory seeking," he says. "[Consumers] bang on the [backrest] to make sure they're grounded with Mother Earth. I've heard numerous people comment that when they meet with firm resistance — and I think this can apply to the back, foot, whatever — that will trigger things, and they will work harder at getting that sensory feedback."

But dynamic components — Peek has created telescoping varieties as well as those with dynamic plantar-dorsi and angle-adjustable features — can help to de-escalate those incidents of extensor tone instead of revving them up.

"By absorbing the energy, unless it reaches end of travel, we're never going to see the load to the component or the wheelchair that we would if the component was not there," he says. "It's absorbed the energy and the travel, hopefully successfully, but at least to some degree."

Doing the Most with the Least

While perhaps not getting the same amount of attention in seating discussions as the pelvis, properly positioned lower extremities can greatly enhance the mobility experience for consumers. And greater understanding of the hows and whys of seating give clinicians and ATPs the opportunity to achieve positioning success while possibly using fewer static accessories.

"We all want to live, we all want to move," Reidmiller says. "That's what our bodies are intended to. So, allow them to move, but find a compromise." ●

A Mile in Their Shoes

Marilyn Monroe famously said, "Give a girl the right shoes, and she can conquer the world." For wheelchair users, it's certainly true that different pairs of shoes can significantly change their lower-extremity positioning.

Stephanie Tanguay, OTR, ATP, clinical education specialist for Motion Concepts, has seen first hand how differences in sole thicknesses and heel heights can impact a seating system's effectiveness.

"Your sandals vs. your dress shoes vs. a pump: Every time you change your shoe and that thickness changes, it's going to change the orientation of your foot platform or foot support," she says. While the wheelchair's seat-to-footplate length remains the same, shoes can alter the lengths of the client's legs.

"With women, you can change 1.5" to 2" easily by changing your footwear," Tanguay says. "So we can have more weight bearing on the thigh and less contact of the heel. If you go to [a shoe] that's thicker or has a heel, now we've got that change in orientation: Your knee is up higher than your pelvis. You've offloaded a little bit underneath your thighs."

ATPs and clinicians may notice that consumers position their feet differently depending on the shoes they're wearing, Tanguay adds.

"If somebody wears heels, what happens? Is the heel on the foot platform or footplate? Do they tuck their feet back and drop their heel off the back side of it?"

While shoes might seem a minor point in the midst of other conversations on clinical efficacy and funding challenges, Tanguay points out that the problems caused by differing sole and heel thicknesses can be significant.

"A couple of years ago, we had a resurgence of platform [shoes]," she

says. "Thankfully, it was rather short-lived."

What happens to somebody who gets a thick shoe like that and goes into their kitchen or lunchroom or desk and pulls up to it, and doesn't realize their knee is now 1.5" or 2" higher than it was? They ram their knee into the table or the desk.

I don't know a lot of people who are going to say, 'Oh, I've got to lower my footplate a notch today.' That doesn't happen."

Tanguay recalls working with a "fashionista" consumer who had a C4 spinal cord injury: "Sitting in her heels in her power chair all the time, she had a lot of contractures of her ankles because of the footwear she loved and insisted on wearing. Because she lost a lot of stability, she got in the habit of riding in her power chair with one leg crossed over the other at the knee because this flexed her up a little more and helped to hold her back in the chair. But it caused her to sit with an obliquity, and scoliosis eventually developed."

Because of potential side effects like these, Tanguay suggests it could be helpful to educate consumers about how footwear — or swapping out seat cushions, for that matter — can alter lower-extremity positioning. But she acknowledges there's no easy fix for the overall issue.

Part of it is human nature: When illness or injury has limited someone's personal mobility and drastically changed his or her life, "The last thing they want to hear is 'And by the way, you can't wear your favorite shoes,'" Tanguay admits.

And no: This isn't just a female issue. Tanguay remembers working with male clients "who were in chairs [and] were still buying the brand-new Nikes, regardless of whether they were walking on the bottoms. It's about showing the tops." ●



“Look Who’s Driving Now!” Activity Ideas for Power Mobility Evals

Recommending the best power mobility system for a specific client’s needs typically involves navigating through countless equipment options. A proper evaluation is crucial because obtaining funding for new devices often takes a substantial amount of time. An improper “yes” or “no” recommendation for specific devices during a one- or two-hour evaluation can lead to lasting consequences. Further difficulties arise in the evaluation process due to financial and space constraints. It is virtually impossible to have all of the options at one’s fingertips during an evaluation, and technology is ever-changing. Moreover, like everyone, clients have good and bad days, so if caught on a bad day, the client may not exhibit all of their potential during the evaluation.

Out of the desire to best serve the clients I worked with and see better outcomes from power mobility evaluations and recommendations, I established a powered mobility driver’s education program. This program includes not only an evaluation, but also protocols for what to do when a client exhibits potential for learning specific powered mobility options.

Training sessions provide the best framework for determining the potential for powered mobility. These sessions provide clients the opportunity to trial more equipment and develop skills, while a treatment team is able to dial in the ideal power mobility system.

I have led training sessions that have resulted in a virtual standoff with clients who refuse to activate the input device to move the chair because refusing was the only bit of control they had. And I have worked with clients who refuse to stop or follow directions once they get the wheelchair moving. Situations such as those can be frustrating for clinicians and caregivers because we know that the client has the potential to become independent in mobility if he would simply follow instructions and fully engage in training.

Through significant time and trial, I developed a set of strategies to increase the rate of success for clients who demonstrate the potential for powered mobility.

What Makes Your Client Tick?

The client and/or caregiver interview portion of the evaluation process is the perfect time to gather essential information, such as what motivates the client and, more importantly, what the client does *not* like. Knowing what the client does not like can help you establish purposeful movements and skills. For example, if you put three of the client’s favorite toys or activities directly in front of him and ask him to drive to the activity he wants, no matter where he goes, it is a win. But if you establish contrast in the options using only one option that he likes and others he does not like, then there is a motivating force to see if the client will drive toward a desired option.

Rolling with Tunes

Music can be a tremendous motivator and one that is relatively mobilitymgmt.com

easy to implement in a time when music is digital and portable. The concept of this strategy is simple. When the client is moving in the wheelchair, play the music; but the moment the chair stops, turn the music off. Eventually the client will learn that if he keeps driving, he will get to enjoy his favorite tunes.

Go Get It

Take the client’s favorite toy or item, and place it a few feet in front of the client in his line of vision. Inform the client that if he drives over to where the item is, he can play with it for an established amount of time. As time goes on, your goal will be to increase the distance that the client must drive to get the item and decrease the length of time he is allotted to play/engage in the activity.

Red Light/Green Light

Some clients find it difficult to stop once they get moving, while others have difficulty moving once they have stopped. The classic game “Red Light/Green Light” is a fantastic activity to teach stop and go. Involve the client’s friends or siblings if it is appropriate.

Scavenger Hunts

Through the use of clues and prizes, you can create a fun activity that requires the client to drive to specific locations and include a variety of skills in the adventure.

Obstacle Course

As the client advances with his skills, create an obstacle course through which the client has to complete fun activities while timing the event. Push the client to see if he can improve his time each training session.

Create a Game Tape

If the client and caregiver agree, video tape portions of the very first session, a few in between and the final session. Just as a professional football team would do, review the tapes with the client and caregivers to identify strengths and areas that need to be improved.

Because of the objective limitations that arise during a power mobility evaluation, it is critically important to tailor device suggestions based on a client’s potential abilities instead of present abilities. Use of the above strategies in making your professional recommendations can be the key to seeing your client drive on to success in their power mobility device. ●



Angie Kiger, M.Ed., CTRS, ATP, is a clinical education specialist at Sunrise Medical.



Tobii Communicates a Gaze at a Time

At June's Families of Spinal Muscular Atrophy (FSMA) event, one of the more popular exhibit hall booths belonged to Tobii ATi, a company specializing in eye-gaze communications technology.

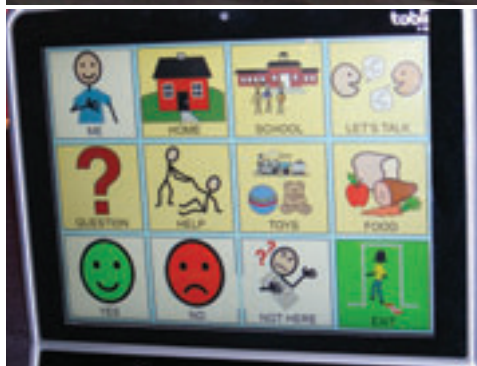
With their sleek good looks — almost indiscernible from a laptop or large tablet — Tobii products are clearly not yesterday's eye-gaze systems. By comparison, Tobii's I-Series is remarkably self contained, free of mazes of cables and blessed with a nine-hour battery life so it doesn't need to be frequently tethered to a power cord, either. I-Series products stand on their own via a picture-frame-like "wedge" design, but they can also be mounted in other positions, if necessary.

The Social Network

The bar is much higher today than it was for augmentative communications systems in the past, so Tobii's products enable consumers to stay in touch with family and friends not just verbally and face to face, but also via e-mail, texting, phone calls and Skype. Users can also access the Internet. Tobii systems even have cameras — one pointing toward and another facing away from the user — so consumers can capture images of themselves and their world.

Environmentally, Tobii can be used to control devices such as TVs and DVD players, air conditioners, lights, doors and stereos.

While Tobii's eye-gaze abilities get most of the buzz, the devices can



Tobii ATi's eye-gaze systems enable consumers to communicate with loved ones near and far. But no, it can't drive a power wheelchair.

also be used via touchscreen, and Tobii is built with tough Gorilla Glass to stand up to heavy-duty taps and touches.

The Eyes Have It

Prep time for using the I-Series' eye-gaze function was minimal — just a few quick exercises so Tobii could "see" and sync with my eyes. (Tobii says its eye gaze works in most lighting conditions and has no trouble with users who wear contacts or glasses.) It took a few more minutes to learn how to work keyboard keys and the mouse via my eyes — to hold my gaze long enough for Tobii to register it, but not so long that my eyes inadvertently "clicked the mouse" repeatedly.

Dani Mohn, the Tobii rep who trained me, reported interest in the system was strong at the FSMA event, and that the children who'd stopped by for a demo had learned to operate the system quickly, in that intuitive way that today's kids seem to have with technology. Tobii suggests its devices could benefit clients with cerebral palsy, Rett syndrome, ALS or stroke/aphasia, as examples. Kids with SMA — known for being very quick on the uptake — would seem to be prime

candidates as well. In fact, Mohn said, a father had brought his teenage son with SMA to the booth and was inquiring about his son's potential ability to use Tobii devices. By the time that conversation was done, the kid was using a design program to paint a picture on one of the devices.

Take a look for yourself at tobii.com. — Laurie Watanabe ●

Research: Stroke Patients May Benefit from Watching Others Perform Tasks

Many people find that getting hands-on with a new task greatly helps them to learn to perform it. But a new study from the University of Southern California (USC) has found that merely watching someone else perform a difficult task can help patients who've had a stroke.

In a June 11 news announcement, USC researchers said they'd monitored the brains of 24 people — half of whom had a stroke, and half of whom had not but were the same age as the stroke patients.

Both groups watched other people perform activities using their hands and arms, such as lifting pencils and flipping cards. These activities, researchers said, would have been difficult for the stroke patients to perform because they'd lost function in their hands and arms.

Researchers then checked to see how participants' brains responded to the activities they were watching.

The brains of the people who had not had strokes responded normally. Researchers reported "activity in cortical motor regions that are generally activated when we watch others perform actions."

But in the brains of stroke patients, researchers said, "Activity was strongest in these regions of the damaged hemisphere, and strongest when stroke patients viewed actions they would have had the most difficulty performing." Why?

"Activating regions near the damaged portions of the brain is like exercising it, building strength that can help it to recover to a degree," the report said.

Kathleen Garrison, the lead author of the research report, explained, "Watching others perform physical tasks leads to activations in motor areas of the damaged hemisphere of the brain after stroke, which is exactly what we're trying to do in therapy. If we can help drive plasticity in these brain regions, we may be able to help individuals with stroke recover more of the ability to move their arm and hand."

Researchers theorized that the results of the study could support the expansion of action-observation as a therapeutic activity for stroke patients in the future. ●

pediatric mobility marketplace



EZ Rider

The newly enhanced EZ Rider is available with Cordura upholstery and a one-piece push handle that easily adjusts to the height of the caregiver. The new Self-Tensio, a self-tensioning seating system designed to increase seating tolerance, comes standard with EZ Rider. Available in sizes 10, 12, 14, 16 and 18, EZ Rider — with transit — is custom built for each user. Five years of growth are built into this lightweight, compact-folding chair.

Convaid

(888) CONVAID

convaid.com



Frontier V6

This super-compact mid-wheel-drive power chair is made to grow with the child. It shares the same frame as the Frontier's all-terrain/ front-wheel/rear-wheel-drive versions, so switching casters, drive tires, bogey and floater arms creates a new configuration. The super-small base is great indoors.

Innovation In Motion

(800) 327-0681

mobility-usa.com



Matrx PS Cushion

An exceptionally lightweight cushion, the Matrx PS is designed to provide superior positioning, stability and comfort for active users. The anatomically contoured shape has a waffled ischial relief recess and a reversible outer cover (use either the smooth or the fabric side out). The inner cover is moisture resistant and easily wiped clean. The Matrx PS is available in a range of sizes, including pediatric.

Invacare Corp.

(800) 333-6900

invacare.com



Natural-Fit LT & Surge LT Handrims

Helping a child to establish good propulsion techniques right from the start is important for efficiency and the future health of their arms and shoulders. The Natural-Fit LT is an ergonomic handrim, while the Surge LT is a lightweight, all-in-one oval handrim with Gription strip to provide traction on every push. Both are available in smaller sizes to fit littler hands.

Out-Front

(480) 833-1829

out-front.com



K450 MX

With an all-wheel, smooth-riding suspension, the K450 MX gets kids where they need to go. That includes getting down to floor level for time with peers, as well as easier transferring. Seat-to-floor heights range from 3" to 26", allowing kids to sit in the K450 MX at the dinner table. Features R-Net electronics and a range of power seat functions, including seat elevator, and optional power tilt. Includes a free growth kit and center-mount adjustable legrests.

Permobil

(800) 736-0925

permobil.com



Kids UP

The Kids UP line offers a full range of attendant-propelled pediatric solutions. The Kids FAST and Kids ROCK products accept the Kids UP Reaction Dynamic Seating System that allows the child to move into flexion or extension in the chair while maintaining proper pelvic positioning and therapeutic support. LifeForm positioning components allow products to be custom configured to the specific needs of each child.

Quantum Rehab

(866) 800-2002

quantumrehab.com

pediatric mobility marketplace



JAY Zip

This lightweight, adjustable back is designed especially for active kids and teens. The Zip's contour shapes vary to fit the unique shapes of clients using each width. One-step release hardware offers 3" of depth/1" of width adjustability and 40° of angle adjustability. The dual-cover system is anti-microbial, water resistant and machine washable. Positioning components such as Whitmyer headrests and lateral thoracic supports are available.

Sunrise Medical
(800) 333-4000
sunrisemedical.com



Stimulite Contoured Cushion

Designed for positioning and comfort, the Stimulite Contoured pediatric cushion has a soft top layer fused to a firmer bottom layer of flexible Stimulite honeycomb. Adductors, abductors and an ischial dish comfortably position the child, while the soft honeycomb cells hold the child in place. In sizes starting at 10x10", with non-standard sizes available on request. At 2.5" thick and weighing just 1-2 lbs., the cushion is suitable for all the activities of today's busy kid.

Supracor
(800) 787-7226
supracor.com



Pediatric Seating

Therafin's pediatric seating & positioning components range from crash-tested WC20 offerings (pictured) to tray options, early-intervention small anterior supports, ProFit Adjust headrests, communication device mounts, and FlexSure Feet. Approved HCPCS codes include E2609, E2617, E0960, E1028 and K0108.

Therafin Corp.
(800) 843-7234
theraфин.com



Recaro Monza Reha Booster Seat

With adjustable lateral supports and a full-range positioning harness, the Recaro Monza Reha booster seat is built to provide superb positioning for children with special needs. The swivel base is designed to provide safe, convenient transport and gives parents a "back-saving" way to transfer the child to and from the seat. The seat is for children from 33.1 to 110.2 lbs. with a back height from 23.6" to 30.3".

Thomashilfen
(866) 870-2122
thomashilfen.us



Twist

Designed from the ground up for the growing child, the Twist encourages exploration. It offers 2" of growth in seat width and 3" of growth in seat depth. Because the Twist grows with the child, there are no parts or growth kits to buy, and the 1" aluminum frame design makes for easy installation of seating components.

TiLite
(800) 545-2266
tilite.com



Kanga TS Frame

This folding tilt-in-space wheelchair has a built-in growth frame that configures to 10", 12" and 14" widths (adult sizes are also available). The Kanga TS includes curb-assist levers, 20" rear quick-release semi-pneumatic wheels, height/angle-adjustable armrests and push handles. The Kanga is bus transit compatible, and the frame adapts to most custom rehab seating systems.

Wenzelite Re/hab
(877) 224-0946
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Complete Feet Footboxes

The products I really love and use all the time are the Complete Feet (pictured) and Single Foot footboxes from Comfort Company. They have thick, comfortable foam padding, which makes them ideal for clients who cannot wear shoes due to foot deformities. And the angle of the back pad can be changed to accommodate dorsiflexion or plantar flexion because it is attached to the bottom pad by Velcro. This is a big advantage over the other footboxes that are fixed at 90°. We have been using these for several years, and they hold up very well, even in institutional settings.

— Dave Stoddard, ATP

United Disabilities Services, Lancaster, Pa.

Comfort Company

(800) 564-9248

comfortcompany.com



Umbrella Cane

When rain is in the forecast, the new Umbrella Cane can do double duty. The umbrella contains a hidden cane that can be detached to offer walking support while the umbrella is also being used. The Umbrella Cane is available in a plaid pattern with a gloss black cane handle.

Drive Medical

(516) 998-4600

drivemedical.com

Custom Back Insert

Now, specify exactly where you want those ROHO air-cell inserts, thanks to a new custom back insert offering from Freedom Designs. A new partnership between the two seating companies gives ATPs and clinicians the ability to order (on a single purchase order) a pre-assembled and fitted product. Via the order form, indicate exactly which air cells you want — and get an insert customized for your client's needs.



Freedom Designs

(800) 331-8551

freedomdesigns.com

Kimba Neo

The newly upgraded Kimba Neo features adjustable rear suspension tension settings for a smooth, stable ride to suit individual needs. The folding mechanism has been improved to facilitate easy transportation and storage. The tilt system is built to be easy to access, and larger rear wheels help to maneuver confidently over rougher terrain. The frame is available in silver or black.



Self-Tensio

Convaid's new self-tensioning seating system is designed to provide therapeutic pelvic positioning similar to a solid seating system, but in an umbrella-style folding rehab chair. It features an expanding frame design, plus flexible, self-adjusting upholstery and underlying mesh support.

Self-Tensio is standard on Convaid's EZ Rider, Cruiser, Scout and Metro chairs.

Convaid

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OK

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